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Page 39

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Val Thr Met Thr Pro Ala Val Pro Ala Val Thr Pro Val Asp Glu Glu 630

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725 730 735 His Gln Ile Leu Gln Gln Gln Ile Gln Asp Ser Ile Cys Pro Pro Gln 740 745 750 Pro Ser Pro Pro Leu Gln Ala Ala Cys Glu Asn Gln Pro Ala Leu Leu 755 760 765 Thr His Gln Leu Gln Arg Leu Arg Ile Gln Pro Ser Ser Pro Pro Pro 770 775 780 Asn His Pro Asn Asn His Leu Phe Arg Gln Pro Ser Asn Ser Pro Pro 800 Pro Met Ser Ser Ala Met Ile Gln Pro His Gly Ala Ala Ser Ser Ser 805 810 815 Gln Phe Gln Gly Leu Pro Ser Arg Ser Ala Ile Phe Gln Gln Gln Pro 820 825 830 Glu Asn Cys Ser Ser Pro Pro Asn Val Ala Leu Thr Cys Leu Gly Met 835 840 845 Gln Gln Pro Ala Gln Ser Gln Gln Val Thr Ile Gln Val Gln Glu Pro 850 855 860 Val Asp Met Leu Ser Asn Met Pro Gly Thr Ala Ala Gly Ser Ser Gly 865 870 875 Arg Gly Ile Ser Ile Ser Pro Ser Ala Gly Gln Met Gln His 885 890 895 Arg Thr Asn Leu Met Ala Thr Leu Ser Tyr Gly His Arg Pro Leu Ser 900 905 910 Lys Gln Leu Ser Ala Asp Ser Ala Glu Ala His Ser Leu Asn Val Asn 915 920 925 Arg Phe Ser Pro Ala Asn Tyr Asp Gln Ala His Leu His Pro His Leu 930 935 940 Phe Ser Asp Gln Ser Arg Gly Ser Pro Ser Ser Tyr Ser Pro Ser Thr 945 950 955 960 960 Gly Val Gly Phe Ser Pro Thr Gln Ala Leu Lys Val Pro Pro Leu Asp 965 970 975

- Gln Phe Pro Thr Phe Pro Pro Ser Ala His Gln Gln Pro Pro His Tyr 980 985 990
- Thr Thr Ser Ala Leu Gln Gln Ala Leu Leu Ser Pro Thr Pro Pro Asp 995 1000 1005
- Tyr Thr Arg His Gln Gln Val Pro His Ile Leu Gln Gly Leu Leu 1010 1020
- Ser Pro Arg His Ser Leu Thr Gly His Ser Asp Ile Arg Leu Pro 1025 1030 1035
- Pro Thr Glu Phe Ala Gln Leu Ile Lys Arg Gln Gln Gln Arg 1040 1045 1050
- Gln Gln Gln Gln Gln Gln Gln Gln Glu Tyr Gln Glu Leu 1055 1060 1065
- Phe Arg His Met Asn Gln Gly Asp Ala Gly Ser Leu Ala Pro Ser 1070 1080
- Leu Gly Gly Gln Ser Met Thr Glu Arg Gln Ala Leu Ser Tyr Gln 1085 1090 1095
- Asn Ala Asp Ser Tyr His His His Thr Ser Pro Gln His Leu Leu 1100 1110
- Gln Ile Arg Ala Gln Glu Cys Val Ser Gln Ala Ser Ser Pro Thr 1115 1120 1125
- Pro Pro His Gly Tyr Ala His Gln Pro Ala Leu Met His Ser Glu 1130 1135 1140
- Ser Met Glu Glu Asp Cys Ser Cys Glu Gly Ala Lys Asp Gly Phe 1145 1150 1155
- Gln Asp Ser Lys Ser Ser Ser Thr Leu Thr Lys Gly Cys His Asp 1160 1165 1170
- Ser Pro Leu Leu Ser Thr Gly Gly Pro Gly Asp Pro Glu Ser 1175 1180 1185
- Leu Leu Gly Thr Val Ser His Ala Gln Glu Leu Gly Ile His Pro 1190 1195 1200
- Tyr Gly His Gln Pro Thr Ala Ala Phe Ser Lys Asn Lys Val Pro 1205 1210 1215 Page 43

Ser Arg Glu Pro Val Ile Gly Asn Cys Met Asp Arg Ser Ser Pro 1220 1225 1230

Gly Gln Ala Val Glu Leu Pro Asp His Asn Gly Leu Gly Tyr Pro 1235 1240 1245

Ala Arg Pro Ser Val His Glu His His Arg Pro Arg Ala Leu Gln 1250 1260

Arg His His Thr Ile Gln Asn Ser Asp Asp Ala Tyr Val Gln Leu 1265 1270 1275

Asp Asn Leu Pro Gly Met Ser Leu Val Ala Gly Lys Ala Leu Ser 1280 1285 1290

Ser Ala Arg Met Ser Asp Ala Val Leu Ser Gln Ser Ser Leu Met 1295 1300 1305

Gly Ser Gln Gln Phe Gln Asp Gly Glu Asn Glu Glu Cys Gly Ala 1310 1320

Ser Leu Gly Gly His Glu His Pro Asp Leu Ser Asp Gly Ser Gln 1325 1330 1335

His Leu Asn Ser Ser Cys Tyr Pro Ser Thr Cys Ile Thr Asp Ile 1340 1345 1350

Leu Leu Ser Tyr Lys His Pro Glu Val Ser Phe Ser Met Glu Gln 1355 1360 1365

Ala Gly Val 1370

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<212> PRT

<213> Homo sapiens

<400> 17

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Val Val Lys Leu Gly Arg His Arg Ile Thr Lys Thr Glu Val Ala Ile 35 40 45 Page 44

Lys Ile Ile Asp Lys Ser Gln Leu Asp Ala Val Asn Leu Glu Lys Ile 50 60 Tyr Arg Glu Val Gln Ile Met Lys Met Leu Asp His Pro His Ile Ile 65 70 75 80 Lys Leu Tyr Gln Val Met Glu Thr Lys Ser Met Leu Tyr Leu Val Thr 85 90 95 Glu Tyr Ala Lys Asn Gly Glu Ile Phe Asp Tyr Leu Ala Asn His Gly
100 105 110 Arg Leu Asn Glu Ser Glu Ala Arg Arg Lys Phe Trp Gln Ile Leu Ser 115 120 125 Ala Val Asp Tyr Cys His Gly Arg Lys Ile Val His Arg Asp Leu Lys 130 135 140 Ala Glu Asn Leu Leu Asp Asn Asn Met Asn Ile Lys Ile Ala Asp 145 150 155 160 Phe Gly Phe Gly Asn Phe Phe Lys Ser Gly Glu Leu Leu Ala Thr Trp 165 170 175 Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Val Phe Glu Gly Gln Gln 180 185 190 Tyr Glu Gly Pro Gln Leu Asp Ile Trp Ser Met Gly Val Val Leu Tyr 195 200 205 Val Leu Val Cys Gly Ala Leu Pro Phe Asp Gly Pro Thr Leu Pro Ile 210 215 220 Leu Arg Gln Arg Val Leu Glu Gly Arg Phe Arg Ile Pro Tyr Phe Met 225 230 235 240 Ser Glu Asp Cys Glu His Leu Ile Arg Arg Met Leu Val Leu Asp Pro 245 250 255 Ser Lys Arg Leu Thr Ile Ala Gln Ile Lys Glu His Lys Trp Met Leu 260 265 270Ile Glu Val Pro Val Gln Arg Pro Val Leu Tyr Pro Gln Glu Gln Glu 275 280 285 Asn Glu Pro Ser Ile Gly Glu Phe Asn Glu Gln Val Leu Arg Leu Met Page 45

His Ser Leu Gly Ile Asp Gln Gln Lys Thr Ile Glu Ser Leu Gln Asn 305 310 315 305 Lys Ser Tyr Asn His Phe Ala Ala Ile Tyr Phe Leu Leu Val Glu Arg 325 330 335 Leu Lys Ser His Arg Ser Ser Phe Pro Val Glu Gln Arg Leu Asp Gly 340 345 350 Arg Gln Arg Arg Pro Ser Thr Ile Ala Glu Gln Thr Val Ala Lys Ala 355 360 365 Gln Thr Val Gly Leu Pro Val Thr Met His Ser Pro Asn Met Arg Leu 370 380 Leu Arg Ser Ala Leu Leu Pro Gln Ala Ser Asn Val Glu Ala Phe Ser 385 390 395 400 Phe Pro Ala Ser Gly Cys Gln Ala Glu Ala Ala Phe Met Glu Glu 405 410 415 Cys Val Asp Thr Pro Lys Val Asn Gly Cys Leu Leu Asp Pro Val Pro 420 425 430 Pro Val Leu Val Arg Lys Gly Cys Gln Ser Leu Pro Ser Asn Met Met 435 440 445 Glu Thr Ser Ile Asp Glu Gly Leu Glu Thr Glu Gly Glu Ala Glu Glu 450 460 Asp Pro Ala His Ala Phe Glu Ala Phe Gln Ser Thr Arg Ser Gly Gln 465 470 475 480 Arg Arg His Thr Leu Ser Glu Val Thr Asn Gln Leu Val Val Met Pro
485 490 495 Gly Ala Gly Lys Ile Phe Ser Met Asn Asp Ser Pro Ser Leu Asp Ser 500 505 510Val Asp Ser Glu Tyr Asp Met Gly Ser Val Gln Arg Asp Leu Asn Phe 515 520 525 Leu Glu Asp Asn Pro Ser Leu Lys Asp Ile Met Leu Ala Asn Gln Pro 530 540

EX04-044patentin.txt Ser Pro Arg Met Thr Ser Pro Phe Ile Ser Leu Arg Pro Thr Asn Pro 545 550 555 560 Ala Met Gln Ala Leu Ser Ser Gln Lys Arg Glu Val His Asn Arg Ser 565 570 575 Pro Val Ser Phe Arg Glu Gly Arg Arg Ala Ser Asp Thr Ser Leu Thr 580 585 590 Gln Gly Ile Val Ala Phe Arg Gln His Leu Gln Asn Leu Ala Arg Thr 595 600 605 Lys Gly Ile Leu Glu Leu Asn Lys Val Gln Leu Leu Tyr Glu Gln Ile 610 620 Gly Pro Glu Ala Asp Pro Asn Leu Ala Pro Ala Ala Pro Gln Leu Gln 625 630 635 640 Asp Leu Ala Ser Ser Cys Pro Gln Glu Glu Val Ser Gln Gln Glu 645 650 655 Ser Val Ser Thr Leu Pro Ala Ser Val His Pro Gln Leu Ser Pro Arg 660 665 670 Gln Ser Leu Glu Thr Gln Tyr Leu Gln His Arg Leu Gln Lys Pro Ser Leu Leu Ser Lys Ala Gln Asn Thr Cys Gln Leu Tyr Cys Lys Glu Pro 690 695 700 Pro Arg Ser Leu Glu Gln Gln Leu Gln Glu His Arg Leu Gln Gln Lys 705 710 715 720 Arg Leu Phe Leu Gln Lys Gln Ser Gln Leu Gln Ala Tyr Phe Asn Gln 725 730 735 Met Gln Ile Ala Glu Ser Ser Tyr Pro Gln Pro Ser Gln Gln Leu Pro 740 745 750 Leu Pro Arg Gln Glu Thr Pro Pro Pro Ser Gln Gln Ala Pro Pro Phe 755 760 765 Ser Leu Thr Gln Pro Leu Ser Pro Val Leu Glu Pro Ser Ser Glu Gln 770 775 780 Met Gln Tyr Ser Pro Phe Leu Ser Gln Tyr Gln Glu Met Gln Leu Gln 785 790 795 800

Pro Leu Pro Ser Thr Ser Gly Pro Arg Ala Ala Pro Pro Leu Pro Thr 805 810 815

Arg Gln Pro Gly Ala Ala Pro Ala Pro Leu Gln Phe Ser Tyr Gln Thr 835 840 845

Cys Glu Leu Pro Ser Ala Ala Ser Pro Ala Pro Asp Tyr Pro Thr Pro 850 855 860

Cys Gln Tyr Pro Val Asp Gly Ala Gln Gln Ser Asp Leu Thr Gly Pro 865 870 875 880

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<211> 926

<212> PRT

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<400> 18

Met Val Met Ala Asp Gly Pro Arg His Leu Gln Arg Gly Pro Val Arg 1 5 10 15

Val Gly Phe Tyr Asp Ile Glu Gly Thr Leu Gly Lys Gly Asn Phe Ala 20 25 30

Val Val Lys Leu Gly Arg His Arg Ile Thr Lys Thr Glu Val Ala Ile 35 40 45

Lys Ile Ile Asp Lys Ser Gln Leu Asp Ala Val Asn Leu Glu Lys Ile 50 60

Tyr Arg Glu Val Gln Ile Met Lys Met Leu Asp His Pro His Ile Ile 65 70 75 80

Lys Leu Tyr Gln Val Met Glu Thr Lys Ser Met Leu Tyr Leu Val Thr 85 90 95

Glu Tyr Ala Lys Asn Gly Glu Ile Phe Asp Tyr Leu Ala Asn His Gly
100 105 110 Arg Leu Asn Glu Ser Glu Ala Arg Arg Lys Phe Trp Gln Ile Leu Ser 115 120 125 Ala Val Asp Tyr Cys His Gly Arg Lys Ile Val His Arg Asp Leu Lys 130 140 Ala Glu Asn Leu Leu Leu Asp Asn Asn Met Asn Ile Lys Ile Ala Asp 145 150 155 160 Phe Gly Phe Gly Asn Phe Phe Lys Ser Gly Glu Leu Leu Ala Thr Trp 165 170 175 Cys Gly Ser Pro Pro Tyr Ala Ala Pro Glu Val Phe Glu Gly Gln Gln 180 185 190 Tyr Glu Gly Pro Gln Leu Asp Ile Trp Ser Met Gly Val Val Leu Tyr 195 200 205 Val Leu Val Cys Gly Ala Leu Pro Phe Asp Gly Pro Thr Leu Pro Ile 210 215 220 Leu Arg Gln Arg Val Leu Glu Gly Arg Phe Arg Ile Pro Tyr Phe Met 225 230 235 240 Ser Glu Asp Cys Glu His Leu Ile Arg Arg Met Leu Val Leu Asp Pro 245 250 255 Ser Lys Arg Leu Thr Ile Ala Gln Ile Lys Glu His Lys Trp Met Leu 260 265 270 Ile Glu Val Pro Val Gln Arg Pro Val Leu Tyr Pro Gln Glu Gln Glu 275 280 285 Asn Glu Pro Ser Ile Gly Glu Phe Asn Glu Gln Val Leu Arg Leu Met 290 295 300 His Ser Leu Gly Ile Asp Gln Gln Lys Thr Ile Glu Ser Leu Gln Asn 305 310 315 320Lys Ser Tyr Asn His Phe Ala Ala Ile Tyr Phe Leu Leu Val Glu Arg 325 330 335 Leu Lys Ser His Arg Ser Ser Phe Pro Val Glu Gln Arg Leu Asp Gly 340 345 350 Page 49

Arg Gln Arg Arg Pro Ser Thr Ile Ala Glu Gln Thr Val Ala Lys Ala 355 360 365 Gln Thr Val Gly Leu Pro Val Thr Met His Ser Pro Asn Met Arg Leu 370 380 Leu Arg Ser Ala Leu Leu Pro Gln Ala Ser Asn Val Glu Ala Phe Ser Phe Pro Ala Ser Gly Cys Gln Ala Glu Ala Ala Phe Met Glu Glu 405 410 415 Cys Val Asp Thr Pro Lys Val Asn Gly Cys Leu Leu Asp Pro Val Pro 420 425 430 Pro Val Leu Val Arg Lys Gly Cys Gln Ser Leu Pro Ser Asn Met Met 435 440 445 Glu Thr Ser Ile Asp Glu Gly Leu Glu Thr Glu Gly Glu Ala Glu Glu 450 460 Asp Pro Ala His Ala Phe Glu Ala Phe Gln Ser Thr Arg Ser Gly Gln 465 470 475 480 Arg Arg His Thr Leu Ser Glu Val Thr Asn Gln Leu Val Val Met Pro 485 490 495 Gly Ala Gly Lys Ile Phe Ser Met Asn Asp Ser Pro Ser Leu Asp Ser 500 505 510Val Asp Ser Glu Tyr Asp Met Gly Ser Val Gln Arg Asp Leu Asn Phe 515 520 525 Leu Glu Asp Asn Pro Ser Leu Lys Asp Ile Met Leu Ala Asn Gln Pro 530 540 Ser Pro Arg Met Thr Ser Pro Phe Ile Ser Leu Arg Pro Thr Asn Pro 545 550 555 560 Ala Met Gln Ala Leu Ser Ser Gln Lys Arg Glu Val His Asn Arg Ser 565 570 575 Pro Val Ser Phe Arg Glu Gly Arg Arg Ala Ser Asp Thr Ser Leu Thr 580 585 590 Gln Gly Ile Val Ala Phe Arg Gln His Leu Gln Asn Leu Ala Arg Thr Page 50

Lys Gly Ile Leu Glu Leu Asn Lys Val Gln Leu Leu Tyr Glu Gln Ile Gly Pro Glu Ala Asp Pro Asn Leu Ala Pro Ala Ala Pro Gln Leu Gln 625 630 Asp Leu Ala Ser Ser Cys Pro Gln Glu Glu Val Ser Gln Gln Gln Glu Ser Val Ser Thr Leu Pro Ala Ser Val His Pro Gln Leu Ser Pro Arg 665 Gln Ser Leu Glu Thr Gln Tyr Leu Gln His Arg Leu Gln Lys Pro Ser Leu Leu Ser Lys Ala Gln Asn Thr Cys Gln Leu Tyr Cys Lys Glu Pro 690 700 Pro Arg Ser Leu Glu Gln Gln Leu Gln Glu His Arg Leu Gln Gln Lys 705 710 715 720 Arg Leu Phe Leu Gln Lys Gln Ser Gln Leu Gln Ala Tyr Phe Asn Gln 725 730 735 Met Gln Ile Ala Glu Ser Ser Tyr Pro Gln Pro Ser Gln Gln Leu Pro 740 745 750 Leu Pro Arg Gln Glu Thr Pro Pro Pro Ser Gln Gln Ala Pro Pro Phe 755 760 765 Ser Leu Thr Gln Pro Leu Ser Pro Val Leu Glu Pro Ser Ser Glu Gln 770 775 780 Met Gln Tyr Ser Pro Phe Leu Ser Gln Tyr Gln Glu Met Gln Leu Gln 785 790 795 800 Pro Leu Pro Ser Thr Ser Gly Pro Arg Ala Ala Pro Pro Leu Pro Thr 815 Arg Gln Pro Gly Ala Ala Pro Ala Pro Leu Gln Phe Ser Tyr Gln Thr 840

Cys Glu Leu Pro Ser Ala Ala Ser Pro Ala Pro Asp Tyr Pro Thr Pro 850 855 860

Cys Gln Tyr Pro Val Asp Gly Ala Gln Gln Ser Asp Leu Thr Gly Pro 865 870 875

Asp Cys Pro Arg Ser Pro Gly Leu Gln Glu Ala Pro Ser Ser Tyr Asp 885 890 895

Pro Leu Ala Leu Ser Glu Leu Pro Gly Leu Phe Asp Cys Glu Met Leu $900 \hspace{1cm} 905 \hspace{1cm} 910$

Asp Ala Val Asp Pro Gln His Asn Gly Tyr Val Leu Val Asn 915 920 925